Title (en)

PROCESS FOR OBTAINING STABLE SUSPENSIONS OF SELENIUM AND SILICON NANOPARTICLES

Title (de)

VERFAHREN ZUM ERHALT STABILER SUSPENSIONEN VON SELEN- UND SILICIUM-NANOPARTIKELN

Title (fr)

PROCÉDÉ D'OBTENTION DE SUSPENSIONS STABLES DE NANOPARTICULES DE SÉLÉNIUM ET DE SILICIUM

Publication

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Application

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Priority

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Abstract (en)

The invention relates to a process for preparing stable suspensions of associates zerovalent selenium and silica nanoparticles, intended for application as plant biostimulants, to increase resistance to abiotic stress factors, to enhance plant nutrients uptake and use and to improve yield quality. Process according to the invention includes the following steps: cultivation of microbial strains highly producing amphiphile proteins with affinity for carbohydrates, on a mediums that promote the induction of those genes, separation of the plant biostimulants fungal mycelium and adding over biosilica rich plant material together with sterile minimal mineral medium, incubation, together with amphiphile proteins recovered from the original medium, removal of the mycelium and plant material, aseptic adding of a 10 mM sodium selenite solution, in Supernatant containing spores, excess amphiphile proteins, silica nanoparticles, incubation for the formation of the selenium nanoparticles, followed by tangential ultrafiltration separation of the newly formed mycelium, concentration of nanoparticles suspension resulted as permeate through tangential ultrafiltration, followed by its sterilization by ultrafiltration.

IPC 8 full level

C01B 33/00 (2006.01); **C05D 9/02** (2006.01); **C05F 11/08** (2006.01); **C12N 1/14** (2006.01); **C12P 3/00** (2006.01)

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